

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim 4 is currently being amended. Support for the amendment to claim 4 can be found at least in FIG. 4B, and the description thereof in the specification. No new matter has been added.

This amendment changes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 3-7, 10-12 and 14 are now pending in this application.

Rejections under 35 U.S.C. § 103

Claims 3-7 and 11-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,060,686 to Jones (hereafter “Jones”) in view of U.S. Patent No. 6,667,456 to Mukasa et al. (hereafter “Mukasa”) or WO 96/38358 to Szelagowski et al. (hereafter “Szelagowski”). Claim 14 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Jones and Mukasa or Szelagowski. Claim 10 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Jones and Mukasa or Szelagowski, and further in view of U.S. Patent No. 3,632,955 to Cruickshank et al. (hereafter “Cruickshank”) or U.S. Patent No. 4,867,560 to Kunitsudu et al. (hereafter “Kunitsudu”). Applicants respectfully traverse these rejections for at least the following reasons.

Claim 4, as amended, recites “wherein the nozzle has a circular groove extending in a circumferential direction on the flat surface area facing the workpiece, the groove having a trench shape extending into the flat surface area.” The references applied in the rejection of the claims fail to disclose at least this feature of claim 4.

The Patent Office recognizes that Jones does not disclose a circular groove in its nozzle, but relies on Mukasa or Szelagowski for disclosing such a feature. Neither Mukasa nor Szelagowski, however, discloses a groove having a trench shape on the flat surface area of a nozzle facing a workpiece, where the groove extends into the flat surface area, and thus even if there were a proper reason to combine Mukasa or Szelagowski with Jones in the manner recited in the Office Action, which there is not, the combination would not have all the features of claim 4.

Mukasa discloses a laser welding apparatus with a nozzle 3 having a coaxial nozzle 6, a discharging nozzle 7, and an evacuating nozzle 8. None of the coaxial nozzle 6, discharging nozzle 7, or evacuating nozzle 8 of Mukasa, however, is a groove having a trench shape. Rather, the nozzles 6, 7 and 8 pass all the way through the nozzle 3, and thus do not have a trench shape.

Szelagowski discloses a device for welding including a disc-shaped nozzle arrangement 13 with a resilient seal 15 to be urged against a workpiece 16. The nozzle arrangement 13 also has a plurality of apertures 17 in the surface of the nozzle. Szelagowski, however, does not disclose as recited in claim 4, “a circular groove extending in a circumferential direction on the flat surface area facing the workpiece, the groove having a trench shape extending into the flat surface area.” The apertures 17, while arranged on a flat surface of the Szelagowski nozzle facing the workpiece 16, do not extend in a circumferential direction, nor do they have a trench shape. Moreover, the elements 22 in the Szelagowski device are part of the resilient seal 15, and are not arranged in the flat surface of the nozzle facing the workpiece, and thus even if the elements 22 could possibly be considered to form trench shaped grooves, such grooves would not be in the flat surface of the nozzle facing the workpiece, and such the grooves extend into the flat surface area as required in claim 4.

In sum, neither Szelagowski nor Mukasa discloses as recited in claim 4, “a circular groove extending in a circumferential direction on the flat surface area facing the workpiece, the groove having a trench shape extending into the flat surface area.” Thus, even if Jones

were modified to include features from Szelagowski or Mukasa, the resultant structure would not have all the features of claim 4.

Moreover, it would not have been obvious to have modified Szelagowski or Mukasa to have the groove as recited in claim 4, where groove has a trench shape extending into the flat surface area of the nozzle. The intended function of the Mukasa device is such that the nozzles 6, 7, and 8 pass all the way through the nozzle 3 to provide a flow path, and modifying Mukasa to have its nozzles 6, 7 and 8 in a trench shape would have rendered the Mukasa device unfit for its intended purpose. Similar considerations are relevant to the apertures 17 of Szelagowski. Moreover, even if the elements 22 of Szelagowski could possibly be considered to form trench shaped grooves, such “grooves” are not intended to extend into a flat surface area of the nozzle of the nozzle arrangement 13 of Szelagowski, but are intended to be a part of the resilient seal 15.

The Patent Office on page 5 of the Office Action states that “Applicant argues that neither Szelagowski or Mukasa discloses a circular groove extending in a circumferential direction on the flat surface area facing the workpiece.” As clarification, applicants’ argument is not that neither Szelagowski nor Mukasa discloses a circular groove extending in a circumferential direction on the flat surface area facing the workpiece, but that neither Szelagowski nor Mukasa discloses a circular groove extending in a circumferential direction on the flat surface area facing the workpiece, the groove having a trench shape extending into the flat surface area.

Cruickshank and Kunitsudu were cited for disclosing other features of the claims, but fail to cure the deficiencies of Jones, Szelagowski and Mukasa.

The dependent claims are patentable for at least the same reasons as claim 4, from which they depend either directly or indirectly, as well as for further patentable features recited therein. For example, claim 14 recites the “groove has a cross section which is one of rectangular, triangular or semicircular.” This feature is not suggested by the references

applied in the rejection, nor would it have been obvious to one skilled in the art based on the applied references.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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